address acid rain, air toxics, stratospheric ozone; passes law giving EPA lead role among federal agencies in environmental

40 miles of river above Shasta Lake. EPA Superfund Emergency Response Program cooperates with other agencies to create "air

HEALTHY ECOSYSTEMS

Protecting watersheds and biodiversity

EPA's Pacific Southwest region – California, Nevada, Arizona, Hawaii, tribal lands and numerous Pacific Islands – harbors thousands of species of fish, wildlife, and plants. The region's ecosystems range from desert mountains to tropical coral reefs. Beyond providing habitat, these ecosystems provide for human needs, such as clean water, fisheries, flood protection, and opportunities for recreation and scientific study. But they face a multitude of threats.

Over the past 150 years, intensive mining, water and agricultural development, and increasing human population and urbanization have degraded or reduced many of the region's ecosystems, along with their species. For example, California's original wetlands have declined to roughly 10% of their original area. Nevada's lakes and wetlands have also been severely reduced. In Arizona, riparian forests are threatened by excessive groundwater pumping. Tribal lands have been overgrazed and eroded. In Hawaii and the Pacific Islands, fragile coral reefs are damaged by polluted runoff and fill projects.

EPA efforts in 1999 to protect and restore ecosystems in the Pacific Southwest included:

Lake Tahoe

CALFED Bay/Delta: The San Francisco Bay-Delta watershed includes the vast Sacramento/San Joaquin river system, providing water for over 20 million Californians, all Central Valley farms, and 120 species of fish and wildlife. EPA was a partner in negotiating the 1994 Bay-Delta Accord, which broke the gridlock over California water policy, and set the agenda for CALFED, the consortium of state and federal agencies working to resolve Bay-Delta water issues. In the past five years, CALFED funded $250 million worth of ecological restoration projects, which comprise the nation's most complex restoration effort. Among the many projects underway: restoration of 42 miles of salmon and steelhead spawning habitat on Battle Creek (near Red Bluff), which involves removal of five low dams and construction of fish ladders on others.

Lake Tahoe: Following the 1997 Tahoe Presidential Summit, EPA helped coordinate federal efforts to protect the lake's famed clarity. In 1999, we funded efforts by U.C. Davis, the U. S. Geological Survey, and the Tahoe Regional Planning Agency to develop monitoring methods and measure the effectiveness of various pollution control measures. These projects contributed to a comprehensive water-

education. 1991: Train derailment spills toxic metam sodium into Sacramento River near Dunsmuir, CA, killing all aquatic life in curtain" in riverbed to dissipate the chemical before it pollutes the Lake. In Washington, D.C., grassroots groups hold national

shed assessment published in February 2000. The assessment will be used to set prioritie for cost-effective actions, and to develop pollution reduction plans, including one already underway for Heavenly Valley Creek. EPA supported projects to restore native plants in eroded areas; and to map all drinking water wells and lake water intakes around Tahoe, so that development threats to drinking water can be avoided. EPA worked with the Washoe Tribe and the Lahontan Regional Water Quality Control Board on these efforts.

San Francisco Bay: A partnership of federal, state, and local agencies, environmental groups and the business community – organized by EPA and the Army Corps of Engineers – finalized a long-term strategy to reduce dumping of dredged mud in San Francisco Bay by more than 75 percent from 1990 levels. Dredging will continue, keeping the Bay's shipping channels deep enough for large ocean-going cargo ships. But instead of dumping most of the mud in the shal - low Bay, which can harm migrating fish, the new strategy will deposit more mud at a designated deep-ocean site beyond the Farallon Islands, and quadruple the volume re-used for wetland restoration, levee repair, and landfill cover. A pilot wetlands restoration using dredged mud, the Sonoma Baylands at the northwest corner of San Pablo Bay, is under way.

Vernal Pools: EPA won a precedent-setting $1.5 million judgment, the largest-ever court-ordered penalty for unauthorized destruction of wetlands. A devel - oper had destroyed seasonal vernal pool wetlands at Borden Ranch (near Sacramento, CA) by deep ripping, a plowing technique that uses bulldozers to tear apart the impermeable clay layer underlying the topsoil. Vernal pool wetlands provide essential habitat for certain species of native wildflowers, endangered species of fairy shrimp, and migratory waterfowl.

Cosumnes River Watershed: EPA funded an $8 million loan from the California State Water Resources Control Board to The Nature Conservancy (TNC) to purchase the 12,362-acre Howard Ranch in Sacramento County, expanding TNC's Cosumnes River Preserve to 37,000 acres. The Preserve protects vernal pools, streams, riparian forests, flood plains and oaks along the Central Valley's last major undammed river. EPA also funded a $1.5 mil - lion loan to the Sacramento Valley Open Space Conservancy to add 344 acres to the Sacramento Valley Open Space conservancy to add 344 acres to the Sacramento Vernal Pool Prairie Preserve, which will ultimately include 3,000 acres. These projects were the first to use EPA's State Revolving fund to acquire land for watershed protection.

An $8 million loan from EPA helped expand the Cosumnes River Preserve in Sacramento County, CA, which protects rare wet - lands and riparian forests.

environmental justice summit. EPA wins $86 million settlement from Hughes Aircraft to clean up contaminated groundwater at hazardous waste disposal site near Santa Maria, CA; pursues responsible parties to pay for long-term remediation. EPA wins $8

As part of a major campaign to clean up the Ala Wai Canal in Honolulu, high school students stencil storm drains to keep pollutants out of the canal.

Ala Wai Watershed Improvement (Oahu): EPA, state and local governments, and business and community groups are working to reduce water pollution in the Ala Wai Watershed, which includes Honolulu's most densely populated areas. The project will improve water quality by combining modern technology with the ancient Hawai'ian system of land division from the uplands to the sea – the ahupua'a. The Project will serve as a model for watershed improvement projects in Hawaii, as well as for incorporating Native Hawai'ian cultural and historical practices.

Reducing Polluted Runoff: Runoff from urban areas, highways, farms, unpaved roads, and logging and construction sites can carry sediment, oil, grease, toxics, pesticides, pathogens and other pollutants into nearby waterways. In California's forested North Coast watersheds, sediment-laden runoff from unpaved roads and logged areas smothers fragile salmon and trout eggs. In urban areas, garden fertilizers and pesticides, motor oil, and house pet waste washes into streets and then into streams, lakes, and the ocean. Under the Clinton Administration's Clean Water Action Plan, EPA is working with states to develop comprehensive plans to reduce polluted runoff. In 1999, EPA approved landmark plans submitted by Arizona and Nevada; California and Hawaii expect to submit plans in 2000. Once EPA approves a plan, the state or Pacific Island receives its share of $18.6 million in funds allotted for reducing polluted runoff in the Pacific Southwest.

TMDLs: In 1999, EPA completed pollution reduction plans (officially known as TMDLs – Total Maximum Daily Loads) for the Noyo, Van Duzen, and South Fork Eel Rivers in Californias' North Coast. These plans, which are designed to restore coho salmon and steelhead trout habitat, take into account all pollution sources in a watershed, including polluted runoff. The North Coast Regional Water Quality Control Board is putting the plans into effect through regulations and voluntary efforts, including reducing erosion from dirt roads and logging, and planting trees to shade streams, keeping them cool enough for salmon and trout.

In Southern California, EPA agreed to meet mandatory deadlines for a hundred more TMDLs for Los Angeles and Ventura County watersheds, including the Los Angeles River, Ventura River, Santa Clara River, Malibu Creek, and 25 beaches in Los Angeles and Ventura counties. The efforts will benefit beachgoers as well as endangered runs of southern steelhead trout. In settling a lawsuit, EPA guaranteed that these 100 plans will be completed. The Los Angeles Regional Water Quality Control Board will develop many of them. Additional plans are being developed for several Arizona streams to reduce mercury pollution, which can build up to toxic levels in the food chain, poisoning fish eaters such as eagles – and people.

Get Involved! To find out what's happening in your area, visit EPA's watershed web page, ***www.epa.gov/surf***. There are maps of every watershed in the nation, accessible by typing in your zip code, city, county, school, or Indian tribe; plus contacts for over 5,500 local watershed protection groups.

Tucson Airport. 1992: 178 nations take part in U. N. Earth Summit in Rio de Janeiro. EPA takes charge of abandoned Casmalia million settlement from Chevron for polluting Santa Barbara Channel with oil and grease from offshore drilling. 1993: EPA reports